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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Tomofumi Miyamoto

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EXAMINER

LEE, PING

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

03/17/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/814,296	Applicant(s) MIYAMOTO, TOMOFUMI	
	Examiner Ping Lee	Art Unit 2615	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 December 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-17 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. The numbering of claims is not in accordance with 37 CFR 1.126 which requires the original numbering of the claims to be preserved throughout the prosecution. When claims are canceled, the remaining claims must not be renumbered. When new claims are presented, they must be numbered consecutively beginning with the number next following the highest numbered claims previously presented (whether entered or not).

Misnumbered claim 15 and 16 (on p. 4 of the amendment filed on 12/14/07) been renumbered as claims 16 and 17 respectively.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 17 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Due to the improper claim numbering as specified before, the dependency of claim 17 is vague and indefinite.

Claim Rejections - 35 USC § 103

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Claims 4-7 and 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freadman (US005805708A) (hereafter Freadman '708) in view of Freadman (US 5,550,921) (hereafter Freadman '921).

Regarding claim 4, Freadman '708 discloses an electronic apparatus (laptop computer) comprising a casing (12), an a speaker unit including a speaker and a cabinet (see Fig. 4) having a port (32); wherein the casing have openings (22) through which sound emitted from the port of the speaker units into the casing is radiated to the outside of the casing. Freadman '708 fails to show two speaker units and their sounds are synthesized together.

Freadman '921 teaches a better way of generating high quality sound for a portable computer. As shown in Fig. 2, Freadman '921 suggests using left and right speaker units with ports (20) to generate back wave to be synthesized (at 16) and radiated to the outside. One skilled in the art would have recognized the benefit of having two speakers instead of a single speaker to give better sound power and quality. Thus, it would have been obvious to one of ordinary skill in the art to modify Freadman '708 in view of Freadman '921 by having an additional speaker and using the theory of bass reflex to combine the back wave from the two speakers in order create high-fidelity sound reproduction.

Regarding claim 5, although not explicitly discussed, the cabinets inherently having different capacities in nature since it would be nearly impossible to produce two cabinets in exact size. In another reasoning, the bass reflex speaker requires the back wave and the front wave to be in phase. This, well known to those skilled in the art,

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requires the port, the duct and the capacity of the speaker cabinet be tuned to maintain this relationship. Since no two speakers are being exactly the same, so the speaker cabinets have to be adjusted separately and individually. Examiner takes Official Notice that tuning the speaker cabinet is notoriously well known in the art. Thus, it would have been obvious to one of ordinary skill in the art to modify Freadman '708 and Freadman '921 by adjusting the cabinets' sizes based on individual speakers in order to properly match the front wave and the back wave.

Regarding claim 6, although Freadman '921 fails to show that the ports are opposed to each other, this is merely a shifting of the location of the port of one speaker with respect to another port of another speaker. Based on the definition of bass-reflex speaker, as long as the back wave at the exit is in phase with the front wave, one skilled in the art would have expected that the direction of the port from one speaker with respect to another port of the other speaker is irrelevant in terms of the sound quality. Thus, it would have been obvious to one of ordinary skill in the art to modify Freadman '708 and Freadman '921 by arranging the ports to be opposed to each other depending on the space available in the casing and the locations of other components in the laptop computer.

Regarding claim 7, Freadman '921 shows that the ports are oriented in the same direction.

Regarding claim 9, Freadman '708 shows the display and keyboard.

Regarding claim 10, Freadman '921 shows the ducts.

Regarding claims 11 and 12, none of the references show the screw for mounting the speaker. Examiner takes Official Notice that this feature is notoriously well known in the art. Thus, it would have been obvious to one of ordinary skill in the art to modify Freadman '708 and Freadman '921 by securing the speakers using screw because it was a matter of engineering design choice on how to mount the speakers to the laptop computer.

6. Claims 8, 14 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Freadman '708 in view of Freadman '921 as applied to claim 4 above, and further in view of Numano et al (hereafter Numano) (US006744623B2).

Regarding claims 14 and 15, Freadman '708 shows the casing as a laptop computer, but fails to show that the speakers are located at the left and right corners of the top wall of the laptop computer. Numano suggests a way to arrange the speakers for the laptop computer to ensure the separation between the left and right stereo speakers. Thus, it would have been obvious to one of ordinary skill in the art to further modify Freadman '708 and Freadman '921 in view of Numano by arranging the speakers at the left and right corners of the laptop computer in order to obtain the stereophonic sound effect.

As discussed above, the direction of port would not affect the sound quality as long as the front wave and back wave at the exit are in same phase.

Regarding claim 8, as shown in Fig. 1 of Numano, the speakers are exposed to the protrusion.

Regarding claim 16, Numano shows the partition walls.

Response to Arguments

7. Applicant's arguments with respect to claims 4-17 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ping Lee whose telephone number is 571-272-7522. The examiner can normally be reached on Monday, Wednesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian C. Chin can be reached on 571-272-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Ping Lee/
Ping Lee
Primary Examiner
Art Unit 2615

pwl